

# Peaceful Nuclear Cooperation

U.S. Support for NPT Article IV

## UNITED STATES & INDONESIA

Through the International Atomic Energy Agency (IAEA), the United States contributes to the work of many countries using nuclear materials and technology for peaceful purposes. In recent years, U.S. support has focused on achieving tangible and lasting benefits in fields that are vital to human development, including agriculture, human health, water resource management, and human resource development. Since 2000, the IAEA has approved and funded \$8,199,567, including \$310,748 in 2013, under its Technical Cooperation (TC) program for projects in Indonesia.



The United States views its support for the peaceful uses of nuclear energy as a critical part of its efforts to strengthen the IAEA and the global nuclear nonproliferation regime. About 25% of the IAEA's annual budget for peaceful nuclear assistance comes from the U.S. In 2012, the U.S. contributed almost \$22 million to the Technical Cooperation Fund and over \$6 million in additional funding for training, fellowships, and cost-free experts.

In addition to these longstanding contributions to the IAEA's peaceful uses programs, at the 2010 NPT Review Conference, the U.S. announced a \$100 million Initiative to further expand this support over the next five years. The U.S. pledged \$50 million towards the IAEA's Peaceful Uses Initiative (PUI), focusing on human health, food security, water resource management, and nuclear power infrastructure development. The U.S. has already allocated over \$27 million to specific PUI projects, and welcomes the contributions of Japan, the Republic of Korea, New Zealand, the Czech Republic, Hungary, Sweden, Australia, France, Indonesia, Brazil, Italy, the UK, and Kazakhstan to this important Initiative.

### NUCLEAR ENERGY

An increasing number of Member States are considering nuclear power as part of their electricity generation options, and those Member States need comprehensive and credible information on nuclear power issues such as cost and benefit, energy security and environmental impact to support their decision making. Indonesia

recently participated in a regional TC project supported by the United States that provided comprehensive information to Member States to support their decision making regarding nuclear power planning and development.

The Indonesian territory of Kalimantan, in particular, is facing a more serious problem in supplying its electricity demand. Recognizing the potential of nuclear energy as a feasible option to relieve pressures arising from increased domestic energy demands on oil, coal, Indonesia therefore recently worked through a national TC project supported by the United States to support a pre-feasibility study on the introduction of small and medium reactors for cogeneration in Kalimantan.

### NUCLEAR SAFETY

Disused facilities and sites contaminated because of activities involving the use of radioactive material exist worldwide and many pose continuing health risks to adjacent communities and, potentially, to the wider public. Indonesia is currently participating in an interregional TC project supported by the United States that will provide support and assistance toward the efficient clean-up of radioactive contaminated facilities and sites. Through this project, barriers to the acceptance of continued or expanded applications of peaceful uses of nuclear technology can, to some extent, be removed.

Indonesia also recently participated in a regional TC project supported by the United States to strengthen the remaining elements of its national regulatory framework for radiation safety to meet international standards and establish a regional network of regulatory authorities to exchange information and share experiences.

1. Power plant under construction. Credit: Kansai Electric Power Co.
2. Standard maintenance check. Credit: Arthus-Bertrand
3. Taking samples to check for the presence of depleted uranium. Credit: A. Bleise/IAEA

## ENVIRONMENT

Indonesia is currently participating in a regional TC project supported by the United States to evaluate the extent and possible impact of the releases of radioactivity from the Fukushima Daiichi nuclear power plant into the marine environment and make scientific assessments of the data.

Additionally, for centuries Indonesian coastal communities have benefited from the reefs, but human induced pressures combined with the natural disturbances have left reefs in Indonesia severely damaged. Climate change also significantly impacts the environment and can contribute to coral degradation. Indonesia is therefore currently working through a national TC project supported by the United States to provide a better understanding of climate change impacts on corals, support an observation plan and mitigate future threats.

## HUMAN HEALTH

One of the greatest challenges developing countries face in fighting cancer is devising plans for building cancer control capacity. Through the IAEA's Programme of Action for Cancer Therapy (PACT), the IAEA has conducted imPACT reviews with funding contributions from the United States in 18 countries, including Indonesia. These reviews evaluate the country's readiness to implement cancer control programs, assess the

national cancer burden, and provide recommendations on developing the country's cancer control capacity.

Indonesia is also participating in a project, coordinated by the IAEA's Department of Nuclear Sciences and Applications and supported by the United States, to strengthen biological dosimetry in the Asia and the Pacific region. The project aims to increase the preparedness of participating Member States to react to national and regional radiation and nuclear accidents by establishing suitable standards to monitor individuals exposed to radiation; updating existing technologies and introducing new technologies; and initiating national, regional and interregional networks on biological dosimetry which can be engaged in scenarios of mass casualties.

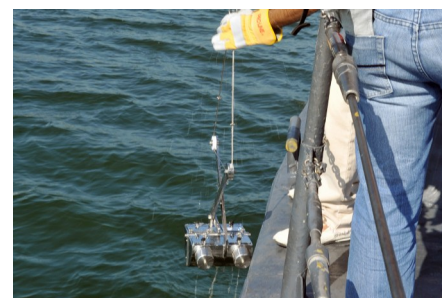
## HUMAN RESOURCES

To contribute to Member States' manpower development, the IAEA awards individual fellowships and organizes group training courses. Every year, numerous fellows and training course participants travel to the United States for training in various peaceful uses of nuclear technology and return to their home country to apply the lessons learned.

Since 2000, the United States has hosted multiple training courses that included Indonesian participants in fields such as nuclear safety and

security, research reactors, decommissioning, insect pest control, food irradiation, radiotherapy, and nuclear information processing. Training was also provided through the IAEA Fellowship Program to 13 Indonesians, one of which was sponsored by the United States, in fields including food irradiation, nuclear medicine imaging, engineering safety, and plant breeding and genetics.

Additionally, since 2000, 22 U.S. experts have traveled to Indonesia to collaborate through various IAEA Technical Cooperation projects. Examples of some topics include markers and breeding, drought tolerance, radioisotopes, safety, and radioecology development.



*Sediment sampling for the study and control of pollutants. Credit: Dean Calma/IAEA*

Through bilateral efforts, the United States has provided direct support to Member States through various collaborative projects such as the exchange of information, expert visits, and training of personnel.

In 2009, the U.S. Department of Energy's National Nuclear Security Administration (DOE/NNSA) provided \$716,000 to Indonesia to assist with legal and regulatory development for the physical protection of nuclear

installations and nuclear material, and other activities.

In 2010, DOE/NNSA further supported Indonesia by providing \$635,000 in funding. Most of the focus in 2012 was regarding the International Nuclear Safeguards and Engagement Program (INSEP). INSEP has collaborated with Indonesia in legal and regulatory development, safeguards training and operations, Additional Protocol implementation, safeguard inspections, and Non-Destructive Assay.

The most recent collaboration focused on joint regional outreach supporting the implementation of the Additional Protocol, which represents a successful example of transitioning a partnership from an assistance-based to a joint-partner model. In 2012, DOE/NNSA funded \$254,000.

Additionally, since 2000, almost 90 Indonesian physicians have been certified in the U.S. through the American Board of Nuclear Medicine.

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